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LEON R TURKEVICH 2000 M STREET NW 7TH FLOOR WASHINGTON, DC 200363307			EXAMINER ALIA, CURTIS A	
			ART UNIT 2616	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/790,204	<b>Applicant(s)</b> SAVAGE ET AL.	
	<b>Examiner</b> Curtis Alia	<b>Art Unit</b> 2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2004 March 2</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Objections*

1. Claim 37 is objected to because of the following informalities: Claim 37 depends from claim 6. It is presumed that the applicant meant for claim 37 to depend from claim 36.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6, 10-16, 20-26, 30-36 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Enhanced Interior Gateway Routing Protocol White Paper (Cisco, Published Feb. 12, 2003, hereinafter referred to as EIGRP White Paper).

For claim 1, EIGRP White Paper discloses a method in a router comprising identifying an active path connected to the router based on at least one active link connected to the router (see pages 2-3, EIGRP router builds a topology table from its neighbors' advertisements to determine an active path), monitoring prescribed attributes of the active path connected to the router (see page 3, neighbor discovery and maintenance, the router sends routing updates when a path has changed, thus having the ability to monitor the network for changes in the path), detecting a change in at least one of the prescribed attributes of the connected active path (see page 4, EIGRP routers send hello packets on an interval to detect a change in the path or to find new neighbors), and outputting an update message, specifying the change, to a second router

according to a prescribed routing protocol (see Neighbor Discovery and Maintenance, the EIGRP router sends a routing update message when a change is detected in the path).

For claim 2, EIGRP White Paper discloses that the identifying step includes associating the at least one active link connected to the router to the active path based on determining that a prescribed destination is reachable by the at least one active link (see page 3, paragraph 2, a router can determine at least one active path to the destination through another router), and storing in a topology table an entry that specifies the prescribed destination and a corresponding at least one interface identifier for the at least one active link (see page 5, building topology table, each reachable network has an entry in the router's topology table including various metrics to identify the properties of that path).

For claim 3, EIGRP White Paper discloses that the identifying step further includes associating a second active link connected to the router to the active path based on determining that the prescribed destination is concurrently reachable by the one active link and the second active link (see page 3, paragraph 2, the best path is referred to as the successor, and another loop-free path is referred to as a feasible successor), determining that the one active link and the second active link are configured for enabling aggregation (see page 3, paragraph 2, EIGRP router builds the topology table to collect the routing information from its neighbors), aggregating at least selected ones of the prescribed attributes of the one active link and the second active link for the respective selected ones of the prescribed attributes of the active path (see page 3, paragraph 2, the EIGRP router saves the information it received from both routers connected to each path, thus aggregating their attributes and saving this information for later use), and storing in the entry in the topology table the prescribed attributes of the active path, and

adding a second entry that specifies the prescribed destination, the interface identifier for the second active link, and the prescribed attributes of the active path (see pages 5-6, building topology table, various attributes are stored in the topology table including the route source (interface identifier), bandwidth, reliability, etc. for each path discovered by the router to that destination).

For claim 4, EIGRP White Paper discloses that the detecting step includes detecting aggregation of the selected ones of the prescribed attributes of the one active link and the second active link for the respective selected ones of the prescribed attributes of the active path (see page 3, paragraph 2, the router collects and saves the information, and changes of information, on both links pertaining to the active path in the topology table, the table including all of the metrics required to calculate a successor and a feasible successor).

For claim 5, EIGRP White Paper discloses that the detecting step includes detecting a change in any one of delay, bandwidth, allowable transmission unit size (MTU), hop count, reliability, and load as the prescribed attributes (see page 5, building the topology table, various metrics/attributes are tracked in the topology table and updated as they change).

For claim 6, EIGRP White Paper discloses that the detecting step includes detecting a change in any one of delay, bandwidth, allowable transmission unit size (MTU), hop count, reliability, and load as the prescribed attributes (see page 5, building the topology table, various metrics/attributes are tracked in the topology table and updated as they change).

For claim 10, EIGRP White Paper discloses that the prescribed routing protocol is EIGRP (see page 3, paragraph 2).

For claim 11, EIGRP White Paper discloses a router comprising a plurality of interfaces configured for establishing respective active links with at least a second router (see figure 1, router 1 has multiple interfaces connecting to multiple routers), a link associating resource configured for identifying an active path connected to the router based on at least one active link connected to the router (see pages 2-3, EIGRP router builds a topology table from its neighbors' advertisements to determine an active path), a monitoring resource configured for monitoring prescribed attributes of the active path connected to the router, the monitoring resource detecting a change in at least one of the prescribed attributes of the connected active path (see page 3, neighbor discovery and maintenance, the router sends routing updates when a path has changed, thus having the ability to monitor the network for changes in the path), and routing protocol resource configured for outputting an update message, specifying the change, to a second router according to a prescribed routing protocol (see Neighbor Discovery and Maintenance, the EIGRP router sends a routing update message when a change is detected in the path).

For claim 12, EIGRP White Paper discloses that the router further comprises a topology table configured for storing entries, each entry identifying a destination and whether the corresponding destination is reachable (see page 3, paragraph 2, a router can determine at least one active path to the destination through another router), wherein the link associating resource is configured for associating the at least one active link connected to the router to the active path based on determining that a prescribed destination is reachable by the at least one active link, the link associating resource configured for storing in the topology table an entry that specifies the prescribed destination and a corresponding at least one interface identifier for the at least one

active link (see page 5, building topology table, each reachable network has an entry in the router's topology table including various metrics to identify the properties of that path).

For claim 13, EIGRP White paper discloses that the link associating resource is configured for associating a second active link connected to the router to the active path based on determining that the prescribed destination is concurrently reachable by the one active link and the second active link (see page 3, paragraph 2, the best path is referred to as the successor, and another loop-free path is referred to as a feasible successor), and determining that the one active link and the second active link are configured for enabling aggregation (see page 3, paragraph 2, EIGRP router builds the topology table to collect the routing information from its neighbors); the link associating resource is configured for aggregating at least selected ones of the prescribed attributes of the one active link and the second active link for the respective selected ones of the prescribed attributes of the active path (see page 3, paragraph 2, the EIGRP router saves the information it received from both routers connected to each path, thus aggregating their attributes and saving this information for later use); the link associating resource is configured for storing in the entry in the topology table the prescribed attributes of the active path, and adding a second entry that specifies the prescribed destination, the interface identifier for the second active link, and the prescribed attributes of the active path see pages 5-6, building topology table, various attributes are stored in the topology table including the route source (interface identifier), bandwidth, reliability, etc. for each path discovered by the router to that destination).

For claim 14, EIGRP White Paper discloses that the monitoring resource is configured for detecting aggregation of the selected ones of the prescribed attributes of the one active link and the second active link for the respective selected ones of the prescribed attributes of the

active path (see page 3, paragraph 2, the router collects and saves the information, and changes of information, on both links pertaining to the active path in the topology table, the table including all of the metrics required to calculate a successor and a feasible successor).

For claim 15, EIGRP White Paper discloses that the monitoring resource is configured for detecting a change in any one of delay, bandwidth, allowable transmission unit size, hop count, reliability, and load as the prescribed attributes (see page 5, building the topology table, various metrics/attributes are tracked in the topology table and updated as they change).

For claim 16, EIGRP White Paper discloses that the monitoring resource is configured for detecting a change in any one of delay, bandwidth, allowable transmission unit size, hop count, reliability, and load as the prescribed attributes (see page 5, building the topology table, various metrics/attributes are tracked in the topology table and updated as they change).

For claim 20, EIGRP White Paper discloses that the routing protocol resource is configured for outputting the update message according to Enhanced Interior Gateway Routing Protocol (EIGRP) protocol as the prescribed routing protocol (see page 3, paragraph 2).

Claims 21-26 and 30 are rejected on the same grounds as claims 1-10, as the computer readable medium with computer executable code performs the method claimed in claims 1-10.

Claims 31-36 and 40 are rejected on the same grounds as claims 1-10, as the router has the means for performing the method claimed in claims 1-10.

***Claim Rejections - 35 USC § 103***

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any



evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7-8, 17-18, 27-28 and 37-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over EIGRP White Paper in view of Doviak et al. (US 6,198,920).

For claim 7, EIGRP White Paper does not explicitly teach that the detecting step further includes obtaining information associated with at least one of the prescribed attributes of the at least one active link from an executable driver resource configured for controlling an interface configured for establishing the at least one active link. Doviak, from an analogous art, teaches that an interface driver is what connects the router to the network, and all information will be sent on a preferred path using these network interfaces. Thus, it would have been obvious to a

person having ordinary skill in the art at the time of the invention to use the network interface drivers to control the network interfaces in receiving information about the active path as taught by Doviak in the network as taught by EIGRP White Paper. The motivation to combine these teachings that the means for sending and receiving the data through the router is hidden from the router, as media access method does not need to be known in the routing layer.

For claim 8, EIGRP White Paper teaches that metrics available to the router include bandwidth, reliability, load, and allowable transmission unit size (see page 5, building topology table).

For claim 17, EIGRP White paper does not explicitly teach that the monitoring resource is configured for obtaining information associated with at least one of the prescribed attributes of the at least one active link from an executable driver resource configured for controlling at least one of the interfaces. Doviak, from an analogous art, teaches that an interface driver is what connects the router to the network, and all information well be sent on a preferred path using these network interfaces. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use the network interface drivers to control the network interfaces in receiving information about the active path as taught by Doviak in the network as taught by EIGRP White Paper. The motivation to combine these teachings that the means for sending and receiving the data through the router is hidden from the router, as media access method does not need to be known in the routing layer.

For claim 18, EIGRP White paper teaches that the information includes any one of the bandwidth, the reliability, the load and the allowable transmission unit size (see page 5, building topology table).

Claim 27 is rejected on the same grounds as claim 7, as the computer readable medium with computer executable code performs the method claimed in claim 7.

Claim 28 is rejected on the same grounds as claim 8, as the computer readable medium with computer executable code performs the method claimed in claim 8.

Claim 37 is rejected on the same grounds as claim 7, as the router has the means for performing the method claimed in claim 7.

Claim 38 is rejected on the same grounds as claim 8, as the router has the means for performing the method claimed in claim 8.

8. Claims 9, 19, 29, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over EIGRP White Paper in view of Graf et al. (US 7,016,355).

For claim 9, EIGRP White Paper does not explicitly teach that the detecting step includes determining delay based on measuring a time between transmitting a data packet onto the one link and receiving a response to the data packet on the one link. Graf, from the same field of endeavor teaches that propagation delay can be measured on a packet switched network by calculating the time elapsed between sending the packet and receiving an echo packet acknowledging receipt of that packet (see abstract). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use the delay measurement method of Graf in the detecting step of EIGRP White paper. The motivation to combine these teachings is that propagation delay is not static because of the "best effort" nature of packet switched networks, sometimes forcing a different path for each transmission.

For claim 19, EIGRP White paper does not explicitly teach a delay measurement resource configured for determining the delay based on measuring a time between transmitting a data

packet onto the one link and receiving a response to the data packet via the one link, the delay measurement resource reporting the determined delay to the monitoring resource. Graf, from the same field of endeavor teaches that propagation delay can be measured on a packet switched network by calculating the time elapsed between sending the packet and receiving an echo packet acknowledging receipt of that packet (see abstract). Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to use the delay measurement method of Graf in the detecting step of EIGRP White paper. The motivation to combine these teachings is that propagation delay is not static because of the "best effort" nature of packet switched networks, sometimes forcing a different path for each transmission.

Claim 29 is rejected on the same grounds as claim 9, as the computer readable medium with computer executable code performs the method claimed in claim 9.

Claim 39 is rejected on the same grounds as claim 9, as the router has the means for performing the method claimed in claim 9.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis Alia whose telephone number is (571) 270-3116. The examiner can normally be reached on Monday through Friday, 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on (571) 272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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CAA



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